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EXAMINER	
DEAN, RAYMOND S	

ART UNIT	PAPER NUMBER
2684	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/828,362	SAVAS, ALPASLAN GENCE	
	Examiner	Art Unit	
	Raymond S Dean	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 9 and 11 - 37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 – 4, 6, 8, 9, 11 – 13, 15, 16 – 18, 21 – 24, 27 – 29, and 32 – 35* is/are rejected.

7)☒ Claim(s) *5,7,14,19,20,25,26,30,31,36 and 37* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *04222004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see amendment filed August 23, 2004 with respect to the objection to the drawings have been fully considered and are persuasive. The objection to said drawings has been withdrawn.

Applicant's arguments, see amendment filed August 23, 2004 with respect to objection to Claims 1, 11, 16, 17, 23, 27, 28, and 34 have been fully considered and are persuasive. The objection to said claims has been withdrawn.

Applicant's arguments with respect to claims 1, 16, and 27 have been considered but are moot in view of the new ground(s) of rejection. LTUs comprise MuxPDUs, which are units of data that are transmitted in a frame. The said frame is transmitted via a radio link thus if the transmit power is too low there can be an error in said data unit and therefore an error in said LTU. The LTU error therefore can be an indicator of the performance of said radio link. Chen and Chang both teach a wireless CDMA system that uses frame payloads to transmit and receive data. Chen further teaches some other performance criteria or quality indicator other than FER that can be used to adjust the set point. It is also very well known by those of ordinary skill in the art that said frame payload comprise MuxPDUs and that said MuxPDUs are grouped into LTUs thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the measure of LTU errors taught in Chang in the CDMA system of Chen such that only the LTUs with an error will be discarded thus allowing all of the

error free LTUs to be transferred to the upper layers as correctly received data thus enabling much more efficient data transmission as taught by Chang.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 – 4, 6, 8, 9, 11 – 13, 15, 16 – 18, 21 – 24, 27 – 29, and 32 – 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 2002/0165004 A1) in view of Chang et al. (US 6,594,244 B1).

Regarding Claim 1, Chen teaches a method for controlling the transmit power of a Base Station (BS) comprising: adjusting a transmit power of the BS using a measure of errors in a received signal transmitted from the BS (Sections 0036, 0039, and 0040, the errors are the frame errors).

Chen does not specifically teach a measure of Logical Transmission Unit (LTU) errors.

Chang teaches a measure of Logical Transmission Unit (LTU) errors (Column 2 lines 48 – 58, since there is a CRC check and a discarding of the LTUs with errors there is an inherent measure of LTU errors)

Chen and Chang both teach a wireless CDMA system that uses frame payloads to transmit and receive data. It is also very well known by those of ordinary skill in the art that said frame payload comprise MuxPDUs and that said MuxPDUs are grouped into LTUs thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the measure of LTU errors taught in Chang in the CDMA system of Chen such that only the LTUs with an error will be discarded thus allowing all of the error free LTUs to be transferred to the upper layers as correctly received data. There will therefore be a wireless system that handles data more efficiently.

Regarding Claim 2, Chen in view of Chang teaches all of the claimed limitations recited in Claim 1. Chang further teaches a received signal is divided into frames, each frame being further divided into a least two LTUs (Figure 2, Figure 6, Column 3 lines 21 – 26), calculating a number of LTU errors in a frame of a received signal (Column 2 lines 48 – 58, since there is a determination of LTU errors and said LTUs are discarded there is an inherent calculation of the number of said LTU errors). Chen further teaches estimating the FER of the received signal (Section 0039), receiving a target FER at the MS (Section 0039), wherein the received signal FER is adjusted by increasing a set point by an up step value when the estimated FER is greater than the received target FER (Section 0040), wherein the magnitude of the up step value depends on the calculated number of frame errors (Section 0040); and decreasing the step point by a down step value when the estimated FER is less than the target FER (Section 0040).

Regarding Claim 3, Chen in view of Chang teaches all of the claimed limitations recited in Claim 2. Chen further teaches a set point that is an energy-per-bit-to-total-noise-density (E sub b/N sub t) set point (Section 0036).

Regarding Claim 4, Chen teaches all of the claimed limitations recited in Claim 3. Chen further teaches estimating the E sub b / N sub t of the received signal (Section 0036); transmitting a power control command from the MS to the BS transmitter instructing the BS transmitter to increase its transmission power when the estimated E sub b / N sub t is less than the E sub b / N sub t set point (Section 0036 - 0037); and transmitting a power control command from the MS to the BS transmitter instructing the BS transmitter to decrease its transmission power when the estimated E sub b / N sub t is greater than the E sub b / N sub t set point (Section 0036 – 0037).

Regarding Claim 6, Chen in view of Chang teaches all of the claimed limitations recited in Claim 2. Chang further teaches wherein each LTU comprises an LTU Cyclic Redundancy Check (CRC) field (Column 3 lines 26 – 28) and checking the LTU CRC field of each LTU in the frame (Column 2 lines 48 – 58).

Regarding Claim 8, Chen in view of Chang teaches all of the claimed limitations recited in Claim 1. Chen further teaches a target FER that is approximately one percent (Section 0039).

Regarding Claim 9, Chen in view of Chang teaches all of the claimed limitations recited in Claim 1. Chen further teaches a BS that operates using Code Division Multiple Access (CDMA) (Section 0034).

Regarding Claim 11, Chen in view of Chang teaches all of the claimed limitations recited in Claim 1. Chang further teaches a received signal that is divided into frames, each frame being further divided into a least two LTUs (Figure 2, Figure 6, Column 3 lines 21 – 26), estimating the LTU error rate of the received signal (Column 2 lines 48 – 58, since there is a CRC check and a discarding of the LTUs with errors there is an inherent measure of an LTU error rate). Chen further teaches receiving a target signal quality indicator at the MS (Section 0039), increasing a set point by an up step value when the estimated signal quality value is greater than the target signal quality value (Section 0040), and decreasing the step point by a down step value when the estimated signal quality value is less than the target signal quality value (Section 0040).

Regarding Claim 12, Chen in view of Chang teaches all of the claimed limitations recited in Claim 11. Chen further teaches a set point that is an energy-per-bit-to-total-noise-density (E sub b/N sub t) set point (Section 0036).

Regarding Claim 13, Chen teaches all of the claimed limitations recited in Claim 12. Chen further teaches estimating the E sub b / N sub t of the received signal (Section 0036); transmitting a power control command from the MS to the BS transmitter instructing the BS transmitter to increase its transmission power when the estimated E sub b / N sub t is less than the E sub b / N sub t set point (Section 0036 - 0037); and transmitting a power control command from the MS to the BS transmitter instructing the BS transmitter to decrease its transmission power when the estimated E sub b / N sub t is greater than the E sub b / N sub t set point (Section 0036 – 0037).

Regarding Claim 15, Chen in view of Chang teaches all of the claimed limitations recited in Claim 11. Chang further teaches wherein each LTU comprises an LTU Cyclic Redundancy Check (CRC) field (Column 3 lines 26 – 28) and checking the LTU CRC field of each LTU in the frame (Column 2 lines 48 – 58).

Regarding Claim 16, Chen teaches a MS comprising: a base station power control module that adjusts a base station signal power (Figure 2, Sections 0036 – 0037).

Chen does not specifically teach a measure of Logical Transmission Unit (LTU) errors.

Chang teaches a measure of Logical Transmission Unit (LTU) errors (Column 2 lines 48 – 58, since there is a CRC check and a discarding of the LTUs with errors there is an inherent measure of LTU errors)

Chen and Chang both teach a wireless CDMA system that uses frame payloads to transmit and receive data. It is also very well known by those of ordinary skill in the art that said frame payload comprise MuxPDUs and that said MuxPDUs are grouped into LTUs thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the measure of LTU errors taught in Chang in the CDMA system of Chen such that only the LTUs with an error will be discarded thus allowing all of the error free LTUs to be transferred to the upper layers as correctly received data. There will therefore be a wireless system that handles data more efficiently.

Regarding Claim 17, Chen in view of Chang teaches all of the claimed limitations recited in Claim 16. Chang further teaches a signal that is divided into frames, each

frame being further divided into at least two LTUs (Figure 2, Figure 6, Column 3 lines 21 – 26), number of LTU errors (Column 2 lines 48 – 58, since there is a determination of LTU errors and said LTUs are discarded there is an inherent calculation of the number of said LTU errors). Chen further teaches an MS comprising a receiver configured for receiving the signal from a BS transmitter and outputting a decoded signal of the received signal (Figure 3, Section 0038); a FER estimator coupled to the MS receiver (Figure 4, Section 0039 - 0040, 422 is the FER estimator), the FER estimator configured for estimating an FER of the decoded signal from the MS receiver and outputting the estimated FER of the decoded signal (Figure 4, Sections 0039 - 0040); and an outer loop power control coupled to the FER estimator (Figure 4), the outer loop power control configured for receiving the estimated FER from the FER estimator and a target FER, and for adjusting and outputting a set point (Figure 4, Section 0039 - 0040), wherein the outer loop power control increases the set point by an up step value when the estimated FER is greater than the target FER (Section 0040), and decreases the set point by a down set value when the estimated FER is less than the target FER (Section 0040).

Regarding Claim 18, Chen in view of Chang teaches all of the claimed limitations recited in Claim 17. Chen further teaches an MS receiver that outputs an estimated E sub b / N sub t of the received signal and the set point is an E sub b / N sub t set point (Figure 4, Section 0036), the MS further comprising an inner loop power control for receiving the E sub b / N sub t set point from the outer loop power control and the estimated E sub b / N sub t from the MS receiver (Figure 4, Section 0036) and outputting a power control command, wherein the power control command instructs the

BS transmitter to increase its transmission power when the estimated E sub b / N sub t is less than the E sub b / N sub t set point (Figure 4, Sections 0036 – 0037) and the power control command instructs the BS transmitter to decrease its transmission power when the estimated E sub b / N sub t is greater than the E sub b / N sub t set point (Figure 4, Sections 0036 –0037); and an MS transmitter for receiving the power control command from the inner loop power control and transmitting the power control command to a BS comprising the BS transmitter (Figures 3 – 4).

Regarding Claim 21, Chen in view of Chang teaches all of the claimed limitations recited in Claim 17. Chang further teaches wherein each LTU comprises an LTU Cyclic Redundancy Check (CRC) field (Column 3 lines 26 – 28) and the MS receiver estimates the number LTU errors in a frame by checking the LTU CRC fields in the frame (Column 2 lines 48 – 58, the data communication device is the MS).

Regarding Claim 22, Chen teaches all of the claimed limitations recited in Claim 18. Chen further teaches a MS transmitter that receives a pilot signal, multiplexes the received power control command with the received pilot signal, and outputs the multiplexed pilot signal to the BS comprising the BS transmitter (Figures 3 – 4, Section 0034, since this is a CDMA system there will pilot channels and control channels thus there will be an inherent multiplexing of the power control commands with the pilot signal).

Regarding Claim 23, Chen in view of Chang teaches all of the claimed limitations recited in Claim 16. Chang further teaches a signal that is divided into frames, each frame being further divided into at least two LTUs (Figure 2, Figure 6, Column 3 lines 21

– 26), LTU error rate estimator (Column 2 lines 48 – 58, since there is a CRC check and a discarding of the LTUs with errors there is an inherent measure of an LTU error rate, which means that there is also an inherent LTU error rate estimator). Chen further teaches an MS receiver receiving the signal from the BS transmitter and outputting a decoded signal of the received signal (Figure 3, Section 0038), a error rate estimator coupled to the receiver (Figure 4, Sections 0039 - 0040, 422 is the error rate estimator), the error rate estimator estimating an error rate of the decoded signal from the MS receiver and outputting the estimated error rate of the decoded signal (Figure 4, Sections 0039 - 0040); and an outer loop power control coupled to the receiver (Figure 4), the outer loop power control configured for receiving the estimated error rate and a target error rate and adjusting and outputting a set point (Figure 4, Sections 0039 - 0040), wherein the outer loop power control increases the set point by an up step value when the estimated error rate is greater than the target error rate (Section 0040) and the outer loop power control decreases the set point by a down set value when the estimated error rate is less than the target error rate (Section 0040).

Regarding Claim 24, Chen in view of Chang teaches all of the claimed limitations recited in Claim 23. Chen further teaches an MS receiver that outputs an estimated E sub b / N sub t of the received signal and the set point is an E sub b / N sub t set point (Figure 4, Section 0036), the MS further comprising an inner loop power control for receiving the E sub b / N sub t set point from the outer loop power control and the estimated E sub b / N sub t from the MS receiver (Figure 4, Section 0036) and outputting a power control command, wherein the power control command instructs the

BS transmitter to increase its transmission power when the estimated E sub b / N sub t is less than the E sub b / N sub t set point (Figure 4, Sections 0036 – 0037) and the power control command instructs the BS transmitter to decrease its transmission power when the estimated E sub b / N sub t is greater than the E sub b / N sub t set point (Figure 4, Sections 0036 –0037); and an MS transmitter for receiving the power control command from the inner loop power control and transmitting the power control command to a BS comprising the BS transmitter (Figures 3 – 4).

Regarding Claim 27, Chen teaches a wireless communication system, comprising a BS and a MS (Figures 2-3), the MS including a BS power control module that adjusts a power level of a signal transmitted by the BS (Figure 2, Sections 0036 – 0037).

Chen does not specifically teach a measure of Logical Transmission Unit (LTU) errors.

Chang teaches a measure of Logical Transmission Unit (LTU) errors (Column 2 lines 48 – 58, since there is a CRC check and a discarding of the LTUs with errors there is an inherent measure of LTU errors)

Chen and Chang both teach a wireless CDMA system that uses frame payloads to transmit and receive data. It is also very well known by those of ordinary skill in the art that said frame payload comprise MuxPDUs and that said MuxPDUs are grouped into LTUs thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the measure of LTU errors taught in Chang in the CDMA system of Chen such that only the LTUs with an error will be discarded thus allowing all

of the error free LTUs to be transferred to the upper layers as correctly received data. There will therefore be a wireless system that handles data more efficiently.

Regarding Claim 28, Chen in view of Chang teaches all of the claimed limitations recited in Claim 27. Chang further teaches a signal that is divided into frames, each frame being further divided into at least two LTUs (Figure 2, Figure 6, Column 3 lines 21 – 26), number of LTU errors (Column 2 lines 48 – 58, since there is a determination of LTU errors and said LTUs are discarded there is an inherent calculation of the number of said LTU errors). Chen further teaches an MS comprising a receiver configured for receiving the signal from a BS transmitter and outputting a decoded signal of the received signal (Figure 3, Section 0038); a FER estimator coupled to the MS receiver (Figure 4, Sections 0039 - 0040, 422 is the FER estimator), the FER estimator configured for estimating an FER of the decoded signal from the MS receiver and outputting the estimated FER of the decoded signal (Figure 4, Sections 0039 - 0040); and an outer loop power control coupled to the FER estimator (Figure 4), the outer loop power control configured for receiving the estimated FER from the FER estimator and a target FER, and for adjusting and outputting a set point (Figure 4, Sections 0039 - 0040), wherein the outer loop power control increases the set point by an up step value when the estimated FER is greater than the target FER (Section 0040), and decreases the set point by a down set value when the estimated FER is less than the target FER (Section 0040).

Regarding Claim 29, Chen in view of Chang teaches all of the claimed limitations recited in Claim 28. Chen further teaches an MS receiver that outputs an estimated E

sub b / N sub t of the received signal and the set point is an E sub b / N sub t set point (Figure 4, Section 0036), the MS further comprising an inner loop power control for receiving the E sub b / N sub t set point from the outer loop power control and the estimated E sub b / N sub t from the MS receiver (Figure 4, Section 0036) and outputting a power control command, wherein the power control command instructs the BS transmitter to increase its transmission power when the estimated E sub b / N sub t is less than the E sub b / N sub t set point (Figure 4, Sections 0036 – 0037) and the power control command instructs the BS transmitter to decrease its transmission power when the estimated E sub b / N sub t is greater than the E sub b / N sub t set point (Figure 4, Sections 0036 –0037); and an MS transmitter for receiving the power control command from the inner loop power control and transmitting the power control command to a BS comprising the BS transmitter (Figures 3 – 4).

Regarding Claim 32, Chen in view of Chang teaches all of the claimed limitations recited in Claim 28. Chang further teaches wherein each LTU comprises an LTU Cyclic Redundancy Check (CRC) field (Column 3 lines 26 – 28) and the MS receiver estimates the number LTU errors in a frame by checking the LTU CRC fields in the frame (Column 2 lines 48 – 58, the data communication device is the MS).

Regarding Claim 33, Chen teaches all of the claimed limitations recited in Claim 29. Chen further teaches a MS transmitter that receives a pilot signal, multiplexes the received power control command with the received pilot signal, and outputs the multiplexed pilot signal to the BS comprising the BS transmitter (Figures 3 – 4, Section 0034, since this is a CDMA system there will pilot channels and control channels thus

there will be an inherent multiplexing of the power control commands with the pilot signal).

Regarding Claim 34, Chen in view of Chang teaches all of the claimed limitations recited in Claim 27. Chang further teaches a signal that is divided into frames, each frame being further divided into at least two LTUs (Figure 2, Figure 6, Column 3 lines 21 – 26), LTU error rate estimator (Column 2 lines 48 – 58, since there is a CRC check and a discarding of the LTUs with errors there is an inherent measure of an LTU error rate, which means that there is also an inherent LTU error rate estimator). Chen further teaches an MS receiver receiving the signal from the BS transmitter and outputting a decoded signal of the received signal (Figure 3, Section 0038), a error rate estimator coupled to the receiver (Figure 4, Sections 0039 - 0040, 422 is the error rate estimator), the error rate estimator estimating an error rate of the decoded signal from the MS receiver and outputting the estimated error rate of the decoded signal (Figure 4, Sections 0039 - 0040); and an outer loop power control coupled to the receiver (Figure 4), the outer loop power control configured for receiving the estimated error rate and a target error rate and adjusting and outputting a set point (Figure 4, Sections 0039 - 0040), wherein the outer loop power control increases the set point by an up step value when the estimated error rate is greater than the target error rate (Section 0040) and the outer loop power control decreases the set point by a down set value when the estimated error rate is less than the target error rate (Section 0040).

Regarding Claim 35, Chen in view of Chang teaches all of the claimed limitations recited in Claim 34. Chen further teaches an MS receiver that outputs an estimated E

sub b / N sub t of the received signal and the set point is an E sub b / N sub t set point (Figure 4, Section 0036), the MS further comprising an inner loop power control for receiving the E sub b / N sub t set point from the outer loop power control and the estimated E sub b / N sub t from the MS receiver (Figure 4, Section 0036) and outputting a power control command, wherein the power control command instructs the BS transmitter to increase its transmission power when the estimated E sub b / N sub t is less than the E sub b / N sub t set point (Figure 4, Sections 0036 – 0037) and the power control command instructs the BS transmitter to decrease its transmission power when the estimated E sub b / N sub t is greater than the E sub b / N sub t set point (Figure 4, Sections 0036 –0037); and an MS transmitter for receiving the power control command from the inner loop power control and transmitting the power control command to a BS comprising the BS transmitter (Figures 3 – 4).

Allowable Subject Matter

4. Claims 5, 7, 14, 19, 20,25, 26, 30, 31, 36, and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Regarding Claims 5, 14, 20, 26, 31, and 37, The prior art of record fails to teach a set point that is the energy-per-Walsh-code-to-total-noise-density (E sub w / N sub t).

Regarding Claims 7, 19, 25, 30, and 36, The prior art of record fails to show wherein the magnitude of the up step value is provided to the outer loop power control by a lookup table that assigns an up step value for each possible number of LTU errors of a frame of the received signal.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S Dean whose telephone number is 703-305-8998. The examiner can normally be reached on 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond S. Dean
October 14, 2004

NAY MAUNG
SUPERVISORY PATENT EXAMINER